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# HUMAN RESOURCE DEVELOPMENT:

# ANALYSIS OF 225 TECHNICAL CO-OPERATION PROJECTS WITH REFERENCE TO STRENGTHENING OF NATIONAL INDUSTRIAL TRAINING AND DEVELOPMENT AND TRANSFER OF TECHNOLOGY CAPABILITIES **

Working document
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** The views expressed in this document are those of the author and do not necessarily reflect those of the UNIDO Secretariat.
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## Table of Contents


| | page |
|---|---|
| SUMMARY | 2 |
| A. Fellowships and Study Tours | 2 |
| B. Institution Building | 3 |
| C. Group/Direct Training | 3 |
| D. Workshops and Seminars | 4 |
| E. Conclusion | 5 |
| TABLES | |
| Table Annex I | 6 |
| Table Annex II | 7 |

SUMMARY

This study analyses UNIDO's technical co-operation in human resource development and development and transfer of technology, which are two of the main planks of UNIDO's Medium-Term Plan, 1990-1995 (GC.3/17, paragraphs 24-34 in particular). The link between them is clearly defined in that document:

> "The primary objective of the human resource development programme of UNIDO is to assist developing countries in building up coherent and sustainable systems for upgrading local technological skills and managerial and entrepreneurial capabilities and integrating them into the industrial development process, in accordance with the national development strategies and priority plans of those countries" (para. 26).
>
> "In general, emphasis will be on linking human resource development and the development and transfer of technology" (para. 27).

Under the heading "Development and transfer of technology", the importance of the human resource in the development of national technological capability is also stressed several times, particularly in paragraphs 31, 33 and 34.

Reflecting the activities of UNIDO described in paragraph 27 of the Medium-Term Plan, annexes 1 and 2 (pp. i-xvii) illustrate the breakdown by technologies of the industrial training programmes supplied by UNIDO. Annex 1 classifies the projects according to industrial sector and shows that 47.2 per cent of the projects refer to no specific industrial sector, but relate to areas common to all sectors. Annex 2 establishes the number of projects and persons trained by region and industrial subsector (ISIC codes) and shows that it is difficult a priori to distinguish the subsectors on which assistance is focused.

In order to analyse the different forms of UNIDO training assistance and their possible impact on strengthening of national training and technology development capabilities, 225 projects received between 1 January 1988 and 1 September 1989 by the Project Appraisal Section have been classified and examined on the basis of their primary functions (this concept is defined in the Guidelines for Project Design of UNDP and UNIDO):

- Fellowships and study tours;
- Institution building;
- Group/direct training;
- Workshops/seminars.

A. **FELLOWSHIPS AND STUDY TOURS** (p. 6)

These two forms of assistance are demand-oriented and are, consequently, among those best suited to solving technical problems facing enterprises. **Fellowships** are granted on an individual basis, generally for a period of several months, and provide training for persons who wish to enhance their skill level in a specific field by following training abroad. **Study tours** are often collective, lasting a maximum of one month, and provide persons with a high level of responsibility within institutions, enterprises or governments with information on a specific subject to enable them to solve a given problem.

In spite of a very high potential level of impact, these projects are generally formulated so vaguely that there is a risk that the desired training and the tasks which the participant must be capable of accomplishing on his return will not match up with the learning experience provided. Countries should be helped to define their requirements and should be given better information on existing training and its content. Furthermore, training is more often than not given in Western institutions, while there may be training of a similar level in developing countries (this would strengthen South-South co-operation) and in-plant training is too rare. Finally, the system of appraisal is inappropriate and there is virtually no follow-up. There is no feedback from the training institutions on the programmes carried out and no final test of knowledge acquired. No questionnaire is subsequently sent out to ascertain the real impact of the programmes (pp. 14-18).

**B. INSTITUTION BUILDING** (p. 19)

This is designed to establish or strengthen training institutions or to train the personnel of other institutions, pursuant to paragraph 26 of the UNIDO Medium-Term Plan mentioned above. There are certain recurring problems in this respect that must be remedied: staff who do not have adequate skills to use complicated equipment, uncertain management and absence of co-ordination and co-operation with enterprises in drawing up training or research and development programmes. It is thus advisable to allow the institutions to design their activities better in the light of industry's requirements, so as to facilitate mastery of the industrialization process.

Twenty-five institution-building projects include a training component. Of these, eight envisage the establishment or strengthening of a training institution and the remaining 17 envisage the training of their personnel, primarily by means of study tours and individual training courses.

**C. GROUP/DIRECT TRAINING** (p. 28)

The direct or group training programmes are desiged to expand and update participants' theoretical and practical occupational skills in a specific given field. The following figures, combined with an examination of the projects, generate a number of questions.

| | Interregional projects | Regional projects | National projects |
|---|---|---|---|
| Distribution of projects | 45.1% | 33.6% | 21.3% |
| Distribution of amount | 43.8% | 33.6% | 22.6% |
| Distribution of persons trained | 38.1% | 35.0% | 26.9% |
| Average number of persons trained per project | 16 | 20 | 24 |
| Average cost per person ($US) | 6 715 | 5 600 | 4 925 |

1. Why are only 21.3 per cent of the projects national, whereas these are best able to take account of the socio-economic situation of a country in order to facilitate mastery of specific technologies? Paragraph 26 of the UNIDO Medium-Term Plan stresses the importance of establishing or strengthening national capabilities and systems for human resource development. A priori the most effective people are also the least expensive, both overall and per person, and they on the average train the largest number of people.

2. Why do only 13.9 per cent of projects combine a group training programme with assistance to a training institution in a developing country? If one strengthens these institutions, then one helps to bring training supply in line with demand (p. 36), in accordance with paragraph 26 of the Medium-Term Plan.

3. Can programmes really be "tailor-made" when 88.7 per cent of them are regional or interregional? Such supply-oriented assistance cannot take account of all the socio-economic features and the priorities of each country, whereas interactiveness between the donor and the potential beneficiary ought to be the rule in programme design. Should UNIDO not play a greater part at that stage? The Organization too often confines itself to acting as the intermediary between the two above-mentioned parties, without utilizing its information, expertise or technical assistance capabilities (p. 40).

4. Would it not be advisable to strengthen the participant selection criteria? The number of countries invited is too large in the case of regional and interregional projects and the participant profile is too ill-defined for there not to be a risk of heterogeneity. The definition of a clearer profile would necessitate clarifying the objectives of the project, focusing the teaching on more specific aspects and thereby increasing the programme's chances of success (p. 41).

5. Can the training received be applied in practice? The participants are more often than not trained in developed countries and become familiar with the most up-to-date techniques. Such training is sometimes inappropriate to the actual situation in their countries or useless if not combined with technology transfer. Furthermore, training one or two persons per country in a technique is only meaningful if the person involved can train others and there is thus a multiplier effect or if the person's hierarchical position in the enterprise or institution is such that he or she may influence choices of technology (p. 43). Would it not also be possible to envisage the training of complete teams by means of programmes in which each individual would be trained in a particular task and in which his or her role in the production process and relations with others would be specifically defined?

6. Is the teaching effectively utilized and with what degree of success? Although the evaluation reports (PER/GT) are compulsorily prepared, there is virtually no organized follow-up to assess the changes introduced in each participant's workplace or the need to establish supplementary programmes or to convert existing ones (p. 44).

D. **WORKSHOPS AND SEMINARS** (p. 47)

The aim here is to bring together for a few days senior decision-makers in the public and private sectors capable of influencing the development of their country and brief them on a specific subject. These meetings normally generate recommendations or proposals for action.

| | Interregional projects | Regional projects | National projects |
|---|---|---|---|
| Distribution of projects | 54.9% | 27.5% | 17.6% |
| Distribution of amount | 60.7% | 29.6% | 9.76% |
| Distribution of persons trained | 50.9% | 28.0% | 21.1% |

Once again regional and interregional projects predominate, but their nature and their purpose make this more understandable since it is not strictly speaking a matter of training in a particular technique. Nevertheless, they do pose a number of problems that have already been referred to: heterogeneity of participants, involvement of UNIDO in their design, difficulty of taking account of the diverse socio-economic features of the countries invited, real impact on development, etc.

**E. CONCLUSION** (p. 53)

If the objective of UNIDO's industrial training is to enable developing countries to master specific technologies, particular attention must be given to forms of assistance which can have the greatest impact in this area, namely, in the short term, fellowships and study tours and national direct or group training projects and, in the medium and long term, the establishment and strengthening of training institutions contributing to national industrial development. However, the assistance must be selective and integrated. There are 47.2 per cent of the projects that do not relate to any particular industrial sector (annex 1, p. i) and it is a priori difficult to distinguish the subsectors on which assistance is focused (annex 2, pp. ii-xvii). It would be necessary to make sure that the training programmes set up by UNIDO (the techniques and subsectors involved) and the subsectoral priorities of the developing countries for which they are intended coincide. In other words, emphasis should be placed on "tailor-made" programmes, rather than "ready-made" programmes, and these should be defined in the light of the Medium-Term Plan, 1990-1995, which highlights human resource development and development and transfer of technology, as well as the link between these two forms of assistance, as a UNIDO priority.

1. **TABLE ANN/I: BREAKDOWN OF PROJECTS BY INDUSTRIAL SECTOR FOR EACH PRIMARY FUNCTION**

| | | |
|---|---|---|
| *FELLOWSHIPS | | |
| - Agro-food industries | 3 | |
| - Chemical industries | 3 | |
| - Metallurgical industries | 2 | |
| - Durable goods industries | 3 | |
| - Others (management, maintenance, industrial planning, preparation of investment projects, etc.) | 9 | |
| *STUDY TOURS | | |
| - Agro-food industries | 1 | |
| - Chemical industries | 1 | |
| - Metallurgical industries | 1 | |
| - Durable goods industries | 0 | |
| - Others | 4 | |
| *GROUP/DIRECT TRAINING | | |
| - Agro-food industries | 9 | |
| - Chemical industries | 12 | |
| - Metallurgical industries | 9 | |
| - Durable goods industries | 31 | |
| - Others | 61 | |
| *WORKSHOPS/SEMINARS | | |
| - Agro-food industries | 8 | |
| - Chemical industries | 7 | |
| - Metallurgical industries | 2 | |
| - Durable goods industries | 10 | |
| - Others | 24 | |
| *INSTITUTION BUILDING | | |
| - Agro-food industries | 4 | |
| - Chemical industries | 8 | |
| - Metallurgical industries | 0 | |
| - Durable goods industries | 7 | |
| - Others | 10 | |
| *COMBINED | | |
| - Agro-food industries | 25 | (10.9%) |
| - Chemical industries | 31 | (13.5%) |
| - Metallurgical industries | 14 | ( 6.1%) |
| - Durable goods industries | 51 | (22.3%) |
| - Others | 108 | (47.2%) |

2. TABLE ANN/II: NUMBER OF PROJECTS AND PERSONS TRAINED PER SUBSECTOR AND REGION

| | | | LATIN AMERICA AND CARIBBEAN | | ASIA AND PACIFIC | | AFRICA | |
|---|---|---|---|---|---|---|---|---|
| | | | NUMBER OF PROJECTS | NUMBER OF PERSONS TRAINED | NUMBER OF PROJECTS | NUMBER OF PERSONS TRAINED | NUMBER OF PROJECTS | NUMBER OF PERSONS TRAINED |
| 11 | | Agriculture and hunting | | | | | | |
| 111 | 1110 | Agricultural and livestock production | 1 | 15 | 1 | 20 | | |
| 112 | 1120 | Agricultural services | | | 2 | 41 | | |
| 23 | 230 | Metal ore mining | | | | | | |
| | 2301 | Iron ore mining | | | | | | |
| | 2302 | Non-ferrous ore mining | | | 1 | 25 | | |
| 31 | | Manufacture of food, beverages and tobacco | | | | | | |
| 311-312 | | Food manufacturing | | | | | | |
| | 3111 | Slaughtering, preparing and preserving meat | | | 1 | 3 | 2 | 35 |
| | 3112 | Manufacture of dairy products | | | | | 1 | 6 |
| | 3113 | Canning and preserving fruits and vegetables | | | | | | |
| | 3114 | Canning, preserving and processing of fish, crustaces and similar foods | | | | | | |
| | 3115 | Manufacture of vegetable and animal oils and fats | | | | | | |
| | 3116 | Grain mill products | | | 1 | 7 | 1 | 1 |

| | | | LATIN AMERICA AND CARIBBEAN | | ASIA AND PACIFIC | | AFRICA | |
|---|---|---|---|---|---|---|---|---|
| | 3117 | Manufacture of bakery products | | | | | | |
| | 3118 | Sugar factories and refineries | 1 | 10 | | | 3 | 34 |
| | 3119 | Manufacture of cacao, chocolate and sugar confectionery | 1 | 10 | | | | |
| | 3121 | Manufacture of food products n.e.c. | | | | | | |
| | 3122 | Manufacture of prepared animal food | | | | | | |
| 313 | | Beverage industries | | | | | | |
| | 3131 | Distilling, rectifying and blending spirits | | | | | | |
| | 3132 | Wine industries | | | | | | |
| | 3133 | Malt liquors and malt | | | | | 1 | 32 |
| | 3134 | Soft drinks and carbonated waters industries | | | | | | |
| 314 | 3140 | Tobacco manufacture | | | | | | |
| 32 | | Textile, wearing apparel and leather industries | | | | | | |
| 321 | | Manufacture of textiles | | | | | | |
| | 3211 | Spinning, weaving and finishing textiles | | | 1 | 12 | | |
| | 3212 | Manufacture of made-up textile goods except wearing apparel | | | | | | |
| | 3213 | Knitting mills | | | | | | |
| | 3214 | Manufacture of carpets and rugs | | | | | | |
| | 3215 | Cordage, rope and twine industries | | | | | 1 | 32 |
| | 3219 | Manufacture of textiles n.e.c. | | | | | 3 | 36 |
| 322 | 3220 | Manufacture of wearing apparel, except footwear | | | | | | |
| 323 | | Manufacture of leather and products of leather, leather substitute and fur, except footwear and wearing apparel | | | | | | |

| | | | LATIN AMERICA AND CARIBBEAN | | ASIA AND PACIFIC | | AFRICA | |
|---|---|---|---|---|---|---|---|---|
| | 3231 | Tanneries and leather finishing | | | | | 2 | 34 |
| | 3232 | Fur dressing and dyeing industries | | | | | | |
| | 3233 | Manufacture of products of leather and leather substitutes, except footwear and wearing apparel | | | | | | |
| 324 | 3240 | Manufacture of footwear, exept vulcanized or moulded rubber or plastic footwear | | | | | | |
| 33 | | Manufacture of wood and wood products, including furniture | | | | | | |
| 331 | | Manufacture of wood and wood and corn products, except furniture | | | | | | |
| | 3311 | Sawmills, planing and other wood mills | | | | | 1 | 25 |
| | 3312 | Manufacture of wooden and cane containers and small cane ware | | | | | | |
| | 3319 | Manufacture of wood and cork products n.e.c. | | | | | 1 | 30 |
| 332 | 3320 | Manufacture of furniture and fixtures, except primarily of metal | | | | | | |
| 34 | | Manufacture of paper and paper products; printing and publishing | | | | | | |
| 341 | | Manufacture of paper and paper products | | | | | | |
| | 3411 | Manufacture of pulp, paper and paperboard | | | 2 | 8 | | |
| | 3412 | Manufacture of containers and boxes of paper and paperboard | | | | | | |
| | 3419 | Manufacture of pulp, paper and paperboard articles n.e.c. | | | | | | |
| 342 | 3420 | Printing, publishing and allied industries | | | | | | |

| | | | LATIN AMERICA AND CARIBBEAN | | ASIA AND PACIFIC | | AFRICA | |
|---|---|---|---|---|---|---|---|---|
| 35 | | Manufacture of chemicals and of chemical, petroleum, coal, rubber and plastic products | | | | | | |
| 351 | | Manufacture of industrial chemicals | | | | | | |
| | 3511 | Manufacture of basic industrial chemicals except fertilizers | | | | | | |
| | 3512 | Manufacture of fertilizers and pesticides | | | 2 | 271 | 1 | 32 |
| | 3513 | Manufacture of synthetic resins, plastic materials and man-made fibres except glass | | | 1 | 1 | | |
| 352 | | Manufacture of other chemical products | | | | | | |
| | 3521 | Manufacture of paints, varnishes and lacquers | | | 1 | 15 | | |
| | 3522 | Manufacture of drugs and medicines | | | | | 1 | 2 |
| | 3523 | Manufacture of soap and cleaning preparations, perfumes, cosmetics and other toilet preparations | | | | | | |
| | 3529 | Manufacture of chemical products n.e.c. | | | | | 1 | - |
| 353 | 3530 | Petroleum refineries | 1 | 20 | | | | |
| 354 | 3540 | Manufacture of miscellaneous products of petroleum and coal | | | | | | |
| 355 | | Manufacture of rubber products | | | | | | |
| | 3551 | Tyre and tube industries | | | | | | |
| | 3559 | Manufacture of rubber products n.e.c. | | | | | | |
| 356 | 3560 | Manufacture of plastic products n.e.c. | | | 2 | 331 | | |

| | | | LATIN AMERICA AND CARIBBEAN | | ASIA AND PACIFIC | | AFRICA | |
|---|---|---|---|---|---|---|---|---|
| 36 | | Manufacture of non-metallic mineral products, except products of petroleum and coal | | | | | | |
| 361 | 3610 | Manufacture of pottery, china and earthenware | | | | | | |
| 362 | 3620 | Manufacture of glass and glass products | | | | | | |
| 369 | | Manufacture of other non-metallic mineral products | | | | | | |
| | 3691 | Manufacture of structural clay products | | | | | | |
| | 3692 | Manufacture of cement, lime and plaster | | | | | | |
| | 3699 | Manufacture of non-metallic mineral products n.e.c. | | | | | | |
| 37 | | Basic metal industries | | | | | | |
| 371 | 3710 | Iron and steel basic industries | | 1 | | 3 | | 35 |
| 372 | 3720 | Non-ferrous metal basic industries | | 2 | | 32 | | |
| 38 | | Manufacture of fabricated metal products, machinery and equipment | | | | | | |
| 381 | | Manufacture of fabricated metal products, except machinery and equipment | | | | | | |
| | 3811 | Manufacture of cutlery, hand tools and general hardware | | | | | | |
| | 3812 | Manufacture of furniture and fixtures primarily of metal | | | | | | |

| | | LATIN AMERICA AND CARIBBEAN | | ASIA AND PACIFIC | | AFRICA | |
|---|---|---|---|---|---|---|---|
| 3813 | Manufacture of structural metal products | | | | 1 | | 3 |
| 3819 | Manufacture of fabricated metal products except machinery and equipment n.e.c. | | | | | | |
| 382 | Manufacture of machinery except electrical | | | | | | |
| 3821 | Manufacture of engines and turbines | | | | | | |
| 3822 | Manufacture of agricultural machinery and equipment | | 1 | 20 | 1 | | 139 |
| 3823 | Manufacture of metal and wood working machinery | | | | 1 | | 139 |
| 3824 | Manufacture of special industrial machinery and equipment except metal and wood working machinery | | | | | | |
| 3825 | Manufacture of office, computing and accounting machinery | | | | | | |
| 3829 | Machinery and equipment except electrical n.e.c. | | | | 1 | | 10 |
| 383 | Manufacture of electical machinery, apparatus, appliances and supplies | | | | | | |
| 3831 | Manufacture of electrical industrial machinery and apparatus | | | | | | |
| 3832 | Manufacture of radio, television and communication equipment and apparatus | | | | | | |
| 3833 | Manufacture of electrical appliances and housewares | | | | | | |
| 3839 | Manufacture of electrical apparatus and supplies n.e.c. | | | | 1 | | 18 |
| 384 | Manufacture of transport equipment | | | | | | |
| 3841 | Ship building and repairing | | | | | | |
| 3842 | Manufacture of railroad equipment | | | | 3 | | 40 |

| | | | | LATIN AMERICA AND CARIBBEAN | | ASIA AND PACIFIC | | AFRICA | |
|---|---|---|---|---|---|---|---|---|---|
| | | 3843 | Manufacture of motor vehicles | | | | | | |
| | | 3844 | Manufacture of motorcycles and bicycles | | | | | | |
| | | 3845 | Manufacture of aircraft | | | | | | |
| | | 3849 | Manufacture of transport equipment n.e.c. | | | | | | |
| | 385 | | Manufacture of professional and scientific, and measuring and controlling equipment n.e.c., and of photographic and optical goods | | | | | | |
| | | 3851 | Manufacture of professional and scientific, and measuring and controlling equipment, n.e.c. | | | 1 | 14 | 1 | 1 |
| | | 3852 | Manufacture of photographic and optical goods | | | | | | |
| | | 3853 | Manufactures of watches and clocks | | | | | | |
| 39 | 390 | | Other manufacturing industries | | | | | | |
| | | 3901 | Manufacture of jewellery and related articles | | | | | | |
| | | 3902 | Manufacture of musical instruments | | | | | | |
| | | 3903 | Manufacture of sporting and athletic goods | | | | | | |
| | | 3909 | Manufacturing industries n.e.c. | | | 1 | 16 | | |
| 41 | 410 | | Electricity, gas and steam | | | | | | |
| | | 4101 | Electric light and power | | | | | 1 | 15 |
| | | 4102 | Gas manufacture and distribution | | | | | | |
| | | 4103 | Steam and hot water supply | | | | | | |
| 42 | 420 | 4200 | Water works and supply | | | | | | |
| 50 | 500 | 5000 | Construction | 1 | 100 | 1 | 30 | 2 | 28 |

| | | | LATIN AMERICA AND CARIBBEAN | | ASIA AND PACIFIC | | AFRICA | |
|---|---|---|---|---|---|---|---|---|
| 71 | | Transport and storage | | | | | | |
| | 711 | Land transport | | | | | | |
| | | 7111 Railway transport | | | | | | |
| | | 7112 Urban, suburban and inter-urban highway passenger transport | | | | | | |
| | | 7113 Other passenger lend transport | | | | | | |
| | | 7114 Freight transport by road | | | | | | |
| | | 7115 Pipeline transport | | | | | | |
| | | 7116 Supporting services to land transport | | | | | | |
| | 719 | Services allied ti transport | | | | | | |
| | | 7191 Services incidental to transport | | | | | | |
| | | 7192 Storage and warehousing | | | | 1 | | 18 |
| 83 | | Real estate and business services | | | | | | |
| | 832 | Business services except machinery and equipment rentals and lessing | | | | | | |
| | | 8321 Legal services | | | | | | |
| | | 8322 Accounting, auditing and bookkeeping services | | | | | | |
| | | 8323 Data processing and tabulating services | | 1 | - | 1 | | - |
| | | 8324 Enginneering, architectural and technical services | | 1 | 30 | 1 | | 3 |
| | | 8325 Advertising services | | | | | | |
| | | 8329 Business services, except machinery and equipment rental and leasing, n.e.c. | | | | 1 | | 24 |

| | | | | EUROPE AND MEDITERRANEAN | | ARAB COUNTRIES | | INTERREGIONAL | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | NUMBER OF PROJECTS | NUMBER OF PERSONS TRAINED | NUMBER OF PROJECTS | NUMBER OF PERSONS TRAINED | NUMBER OF PROJECTS | NUMBER OF PERSONS TRAINED |
| 11 | | | Agriculture and hunting | | | | | | |
| | 111 | 1110 | Agricultural and livestock production | | | | | 2 | 181 |
| | 112 | 1120 | Agricultural services | | | | | 1 | 170 |
| 22 | 220 | 2200 | Crude petroleum and natural gas production | | | | | 2 | 55 |
| 31 | | | Manufacture of food, beverages and tobacco | | | | | | |
| | 311-312 | | Food manufacturing | | | | | | |
| | | 3111 | Slaughtering, preparing and preserving meat | | | | | | |
| | | 3112 | Manufacture of dairy products | | | | | 1 | 22 |
| | | 3113 | Canning and preserving fruits and vegetables | | | | | 2 | 27 |
| | | 3114 | Canning, preserving and processing of fish, crustaces and similar foods | | | | | 2 | 33 |
| | | 3115 | Manufacture of vegetable and animal oils and fats | | | | | 2 | 42 |
| | | 3116 | Grain mill products | | | | | 2 | 37 |
| | | 3117 | Manufacture of bakery products | | | | | | |
| | | 3118 | Sugar factories and refineries | 2 | 4 | | | 5 | 219 |
| | | 3119 | Manufacture of cacao, chocolate and sugar confectionery | | | | | 1 | 22 |

| | | | EUROPE AND MEDITERRANEAN | | ARAB COUNTRIES | | INTERREGIONAL | |
|---|---|---|---|---|---|---|---|---|
| | 3121 | Manufacture of food products n.e.c. | | | | | 2 | 42 |
| | 3122 | Manufacture of prepared animal food | | | | | | |
| 313 | | Beverage industries | | | | | | |
| | 3131 | Distilling, rectifying and blending spirits | | | | | | |
| | 3132 | Wine industries | | | | | | |
| | 3133 | Malt liquors and malt | | | | | 1 | 22 |
| | 3134 | Soft drinks and carbonated waters industries | | | 1 | 6 | | |
| 314 | 3140 | Tobacco manufacture | | | | | | |
| 32 | | Textile, wearing apparel and leather industries | | | | | | |
| 321 | | Manufacture of textiles | | | | | | |
| | 3211 | Spinning, weaving and finishing textiles | | | | | | |
| | 3212 | Manufacture of made-up textile goods except wearing apparel | | | | | 1 | 13 |
| | 3213 | Knitting mills | | | | | | |
| | 3214 | Manufacture of carpets and rugs | | | | | | |
| | 3215 | Cordage, rope and twine industries | | | | | | |
| | 3219 | Manufacture of textiles n.e.c. | | | | | 1 | 13 |
| 322 | 3220 | Manufacture of wearing apparel, except footwear | | | | | | |
| 323 | | Manufacture of leather and products of leather, leather substitute and fur, except footwear and wearing apparel | | | | | | |
| | 3231 | Tanneries and leather finishing | 1 | 30 | | | 1 | 22 |
| | 3232 | Fur dressing and dyeing industries | | | | | | |

| | | | EUROPE AND MEDITERRANEAN | | ARAB COUNTRIES | | INTERREGIONAL | |
|---|---|---|---|---|---|---|---|---|
| | 3233 | Manufacture of products of leather and leather substitutes, except footwear and wearing apparel | 1 | 30 | | | | |
| 324 | 3240 | Manufacture of footwear, exept vulcanized or moulded rubber or plastic footwear | 1 | 30 | 1 | 50 | | |
| 33 | | Manufacture of wood and wood products, including furniture | | | | | | |
| 331 | | Manufacture of wood and wood and corn products, except furniture | | | | | | |
| | 3311 | Sawmills, planing and other wood mills | | | | | 2 | 50 |
| | 3312 | Manufacture of wooden and cane containers and small cane ware | | | | | | |
| | 3319 | Manufacture of wood and cork products n.e.c. | | | | | 2 | 60 |
| 332 | 3320 | Manufacture of furniture and fixtures, except primarily of metal | | | | | | |
| 34 | | Manufacture of paper and paper products; printing and publishing | | | | | | |
| 341 | | Manufacture of paper and paper products | | | | | | |
| | 3411 | Manufacture of pulp, paper and paperboard | | | | | 2 | 40 |
| | 3412 | Manufacture of containers and boxes of paper and paperboard | | | | | | |
| | 3419 | Manufacture of pulp, paper and paperboard articles n.e.c. | | | | | | |
| 342 | 3420 | Printing, publishing and allied industries | | | | | 2 | 40 |

| | | | EUROPE AND MEDITERRANEAN | | ARAB COUNTRIES | INTERREGIONAL | |
|---|---|---|---|---|---|---|---|
| 35 | | Manufacture of chemicals and of chemical, petroleum, coal, rubber and plastic products | | | | | |
| | 351 | Manufacture of industrial chemicals | | | | | |
| | | 3511 Manufacture of basic industrial chemicals except fertilizers | | | | 1 | 8 |
| | | 3512 Manufacture of fertilizers and pesticides | | | | 3 | 61 |
| | | 3513 Manufacture of synthetic resins, plastic materials and man-made fibres except glass | 1 | 1 | | 1 | 10 |
| | 352 | Manufacture of other chemical products | | | | | |
| | | 3521 Manufacture of paints, varnishes and lacquers | | | | | |
| | | 3522 Manufacture of drugs and medicines | | | | 6 | 94 |
| | | 3523 Manufacture of scap and cleaning preparations, perfumes, cosmetics and other toilet preparations | | | | | |
| | | 3529 Manufacture of chemical products n.e.c. | 1 | 4 | | 4 | 50 |
| | 353 | 3530 Petroleum refineries | | | | 1 | 20 |
| | 354 | 3540 Manufacture of miscellaneous products of petroleum and coal | | | | | |
| | 355 | Manufacture of rubber products | | | | | |
| | | 3551 Tyre and tube industries | | | | 1 | 15 |
| | | 3559 Manufacture of rubber products n.e.c. | | | | 1 | 15 |
| | 356 | 3560 Manufacture of plastic products n.e.c. | | | | 2 | 15 |

| | | | EUROPE AND MEDITERRANEAN | | ARAB COUNTRIES | | INTERREGIONAL | |
|---|---|---|---|---|---|---|---|---|
| 36 | | Manufacture of non-metallic mineral products, except products of petroleum and coal | | | | | | |
| | 361 3610 | Manufacture of pottery, china and earthenware | | | | | | |
| | 362 3620 | Manufacture of glass and glass products | | | | | 1 | 15 |
| | 369 | Manufacture of other non-metallic mineral products | | | | | | |
| | 3691 | Manufacture of structural clay products | | | 1 | 20 | | |
| | 3692 | Manufacture of cement, lime and plaster | | | 2 | 60 | 4 | 47 |
| | 3699 | Manufacture of non-metallic mineral products n.e.c. | | | 1 | 20 | 2 | 45 |
| 37 | | Basic metal industries | | | | | | |
| | 371 3710 | Iron and steel basic industries | 1 | 2 | | | 7 | 87 |
| | 372 3720 | Non-ferrous metal basic industries | | | | | 2 | 23 |
| 38 | | Manufacture of fabricated metal products, machinery and equipment | | | | | | |
| | 381 | Manufacture of fabricated metal products, except machinery and equipment | | | | | | |
| | 3811 | Manufacture of cutlery, hand tools and general hardware | | | | | | |
| | 3812 | Manufacture of furniture and fixtures primarily of metal | | | | | | |
| | 3813 | Manufacture of structural metal products | | | | | | |
| | 3819 | Manufacture of fabricated metal products except machinery and equipment n.e.c. | | | | | 2 | 24 |

| | | EUROPE AND MEDITERRANEAN | | ARAB COUNTRIES | | INTERREGIONAL | |
|---|---|---|---|---|---|---|---|
| 382 | Manufacture of machinery except electrical | | | | | | |
| 3821 | Manufacture of engines and turbines | | | | | 2 | 45 |
| 3822 | Manufacture of agricultural machinery and equipment | 1 | 1 | 1 | - | 3 | 65 |
| 3823 | Manufacture of metal and wood working machinery | | | | | 1 | 15 |
| 3824 | Manufacture of special industrial machinery and equipment except metal and wood working machinery | | | | | 1 | 15 |
| 3825 | Manufacture of office, computing and accounting machinery | | | | | 1 | 10 |
| 3829 | Machinery and equipment except electrical n.e.c. | | | | | 2 | 34 |
| 383 | Manufacture of electical machinery, apparatus, appliances and supplies | | | | | | |
| 3831 | Manufacture of electrical industrial machinery and apparatus | 2 | 3 | | | | |
| 3832 | Manufacture of radio, television and communication equipment and apparatus | | | | | | |
| 3833 | Manufacture of electrical appliances and housewares | | | | | | |
| 3839 | Manufacture of electrical apparatus and supplies n.e.c. | | | | | | |
| 384 | Manufacture of transport equipment | | | | | | |
| 3841 | Ship building and repairing | | | | | | |
| 3842 | Manufacture of railroad equipment | | | 1 | 16 | 1 | 20 |
| 3843 | Manufacture of motor vehicles | | | | | | |
| 3844 | Manufacture of motorcycles and bicycles | | | | | | |
| 3845 | Manufacture of aircraft | | | | | | |
| 3849 | Manufacture of transport equipment n.e.c. | | | 1 | 30 | 1 | 10 |

| | | | | EUROPE AND MEDITERRANEAN | APAE COUNTRIES | | INTERREGIONAL | |
|---|---|---|---|---|---|---|---|---|
| | 385 | | Manufacture of professional and scientific, and measuring and controlling equipment n.e.c., and of photographic and optical goods | | | | | |
| | | 3851 | Manufacture of professional and scientific, and measuring and controlling equipment, n.e.c. | | | 1 | | 20 |
| | | 3852 | Manufacture of photographic and optical goods | | | | | |
| | | 3853 | Manufactures of watches and clocks | | | | | |
| 39 | 390 | | Other manufacturing industries | | | | | |
| | | 3901 | Manufacture of jewellery and related articles | | | | | |
| | | 3902 | Manufacture of musical instruments | | | | | |
| | | 3903 | Manufacture of sporting and athletic goods | | | | | |
| | | 3909 | Manufacturing industries n.e.c. | | | 3 | | 25 |
| 41 | 410 | | Electricity, gas and steam | | | | | |
| | | 4101 | Electric light and power | | | 1 | | 15 |
| | | 4102 | Gas manufacture and distribution | | | | | |
| | | 4103 | Steam and hot water supply | | | | | |
| 42 | 420 | 4200 | Water works and supply | | | | | |
| 50 | 500 | 5000 | Construction | | 1 | 20 | 1 | 10 |

| | | | EUROPE AND MEDITERRANEAN | | ARAB COUNTRIES | | INTERREGIONAL | |
|---|---|---|---|---|---|---|---|---|
| 71 | | Transport and storage | | | | | | |
| | 711 | Land transport | | | | | | |
| | | 7111 Railway transport | | | 1 | 30 | 1 | 20 |
| | | 7112 Urban, suburban and inter-urban highway passenger transport | | | | | | |
| | | 7113 Other passenger lend transport | | | | | | |
| | | 7114 Freight transport by road | | | | | | |
| | | 7115 Pipeline transport | | | | | | |
| | | 7116 Supporting services to land transport | | | | | | |
| | 719 | Services allied ti transport | | | | | | |
| | | 7191 Services incidental to transport | | | | | 1 | 20 |
| | | 7192 Storage and warehousing | | | | | | |
| 83 | | Real estate and business services | | | | | | |
| | 832 | Business services except machinery and equipment rentals and lessing | | | | | | |
| | | 8321 Legal services | | | | | | |
| | | 8322 Accounting, auditing and bookkeeping services | | | | | | |
| | | 8323 Data processing and tabulating services | | | | | | |
| | | 8324 Enginneering, architectural and technical services | | | | | | |
| | | 8325 Advertising services | | | | | | |
| | | 8329 Business services, except machinery and equipment rental and leasing, n.e.c. | | | | | 1 | 15 |